

Relevance and feasibility of social life cycle assessment from a company perspective

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Abstract

Background, aim, and scope Methodology development should reflect demands from the intended users: what are the needs of the user group and what is feasible in terms of requirements involving data and work? Mapping these questions of relevance and feasibility is thus a way to facilitate a higher degree of relevance of the developed methodology. For the emerging area of social life cycle assessment (SLCA), several different potential user groups may be identified. This article addresses the issues of relevance and feasibility of SLCA from a company perspective through a series of interviews among potential company users.

Methods and materials The empirical basis for the survey is a series of eight semi-structured interviews with larger Danish companies, all of which potentially have the capacity and will to use comprehensive social assessment methodologies. SLCA is not yet a well-defined methodology, but still it is possible to outline several potential applications of SLCA and the tasks a company must be able to perform in order to make use of these applications. The interviews focus on the companies' interest in these potential applications and their ability and willingness to undertake the required work.

Results Based on these interviews, three hypotheses are developed relating to these companies' potential use of SLCA, viz.: (1) needs which may be supported by SLCA

relate to three different applications, being comparative assertions, use stage assessments, and weighting of social impacts; (2) assessing the full life cycle of a product or service is rarely possible for the companies; and (3) companies see their social responsibility in the product chain as broader than dictated by the product perspective of SLCA. Trends for these three hypotheses developed on the basis of the opinions of the interviewees. Also, factors influencing the generalization of the results to cover other industries are analyzed.

Discussion Full comparative assertions as known from environmental life cycle assessment (LCA) may be difficult in a company context due to several difficulties in assessing the full life cycle. Furthermore, the comparative assertion may potentially be hampered by differences in how companies typically allocate responsibility along the product chain and how it is done in SLCA, creating a boundary setting issue. These problems do, only in a limited degree, apply for both the use stage assessment and the tool for weighting social issues.

Conclusion Despite these difficulties, it is concluded that all three applications of SLCA may be possible for the interviewed companies, but it seems the tendency is to demand assessment tools with very limited life cycle perspective, which to some extent deviate from the original thought behind the LCA tools as being holistic decision aid tools.

Perspectives It is advocated that there is a need to focus more on questions regarding the relevance and feasibility of SLCA from several different perspectives to direct the future methodology development.

Keywords Application · Business · Comparative assertion · Company perspective · Feasibility study · Interviews · Product comparison · SLCA · Social LCA · Use stage assessment · Weighting

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1 Background, aim, and scope

A fundamental motivation behind every method development is its use. Several aspects may influence whether or not a method is used, but key issues are: what are the needs of the intended user group, and what is feasible in terms of requirements to data and work? The purpose of this article is to raise these questions of relevance and feasibility in relation to social life cycle assessment (SLCA) and give some tentative answers, supporting the fact that the methodology development efforts are in line with the actual user needs and possibilities.

As mentioned in Jørgensen et al. (2008), methodologically different SLCA approaches are being developed for different user groups and applications. Different user groups may have different needs and possibilities and it is therefore possible to imagine several different types of uses that potentially require different methods. This article focuses on the companies as a potential large user group.

SLCA is a method currently under development¹ and will probably be so for many years to come. When analyzing the above questions, it is therefore also considered relevant to encompass trends that could influence the interest for using SLCA.

2 Experiences from previous studies

Even though there has been an increased activity on the development of SLCA in recent years, very little can be found in literature addressing the relevance and feasibility of SLCA in a company context. Several SLCA approaches address the company context, such as Schmidt et al. (2004), Dreyer et al. (2006), Méthot (2005), the Earthster initiative (www.earthster.org), and to some extent the third-party-labeling initiative by Spillemaeckers et al. (2004). Also, the laptop study performed by Manhart and Grießhammer (2006) should be mentioned here, even though their assessment approach is not directed specifically for companies.

In all studies, reflections on the use aspect are very limited. In relation to the feasibility of performing an SLCA, Schmidt et al. (2004) conclude from their use of an

SLCA including the full life cycle that data availability was a major obstacle in performing the assessment. Also, Manhart and Grießhammer (2006) mention in their SLCA laptop case study that data availability is a barrier for carrying out the analysis.

In relation to the relevance of SLCA in a company context, several different purposes of SLCA are proposed; Dreyer et al. (2006) and Manhart and Grießhammer (2006) propose an SLCA approach with the purpose of identifying improvement potentials in the product or service life cycle; Schmidt et al. (2004) propose a tool for comparing the social impacts of two comparable products or services; Spillemaeckers et al. (2004) develop a social labeling scheme including mainly the upstream part of the life cycle; and Méthot (2005) develops a life-cycle-oriented social responsibility investment tool. However, articles or reports on the extent to which these tools are adopted or demanded by companies in general are, to the authors' knowledge, nonexistent.

It therefore seems fair to state that knowledge about the user aspect of SLCA in a company context is very limited. Data availability may be an issue but, obviously, if SLCA proves to be sufficiently attractive, this barrier may be overcome. Also, we know that some tools have been developed (Schmidt et al. 2004; Dreyer et al. 2006; Méthot 2005; the Earthster initiative (www.earthster.org)), but we know nothing about their general relevance for companies.

3 Research approach

Since the user aspect of SLCA is a nearly untouched area, it was considered appropriate to follow an inductive approach, where empirical data are used as the basis for theory development. The method of inquiry should therefore be explorative and flexible allowing for the development and testing of hypotheses. In this manner, the method of inquiry should have a clear iterative element, allowing for the continual testing of emerging hypotheses that evolved during the study. Furthermore, the study should be directed towards analyzing both already performed actions but also attitudes towards potential future actions.

In order to allow this “continual dialog” within the area of study and investigate activities which have already occurred or may potentially occur in the future, the explorative semi-structured interview was found to be suitable (Hakim 1987; Kvale 2004).

To reduce bias in the data analysis and writing process, the article has been revised and approved by the interviewees after conclusions were drawn. During the review process, nuances have been added to the conclusions, although not to an extent which called for a second revision by the interviewees.

¹ For other papers on social aspects in LCA, see Klopffner and Udo de Haes (2008), Jørgensen et al. (2008), Pelletier et al. (2007), Dreyer et al. (2006), Hayashi et al. (2006), Hunkeler (2006), Labuschagne and Brent (2006), Norris (2006), Weidema (2006), Gauthier (2005), Hunkeler and Rebitzer (2005), Christensen and Olsen (2004), Schmidt et al. (2004), Klopffner (2003), Sharma (2000). The reader may also refer to the following reports, conference proceedings, and web pages: Earthster (www.earthster.org), Flysjö (2006), Grießhammer et al. (2006), Manhart and Grießhammer (2006), Nazarkina and Le Bocq (2006), Barthel et al. (2005), Méthot (2005), Spillemaeckers et al. (2004).

Table 1 Interviewed companies

| Business | Size (employees) | Main customers | Market | Main activity |
|------------------------|------------------|----------------|----------|---------------|
| Health care | 5–10,000 | Business | Global | Manufacturing |
| Health care | 20–40,000 | Consumers | Global | Manufacturing |
| Health care | 5–10,000 | Consumers | Global | Manufacturing |
| Mechanical components | 20–40,000 | Business | Global | Manufacturing |
| Mechanical components | 10–20,000 | Business | Global | Manufacturing |
| Textiles and furniture | 2–5,000 | Consumers | European | Import |
| Biotech | 2–5,000 | Business | Global | Manufacturing |
| Biotech/food products | 5–10,000 | Business | Global | Manufacturing |

3.1 Choosing the interviewees

The goal of the interviews was to establish knowledge about potential users, who therefore had to be located. Some assumptions about what characterizes a potential user had to be made, which will be discussed below.

SLCA will easily be a time-consuming and expertise-demanding method to apply. It was therefore assumed, prior to the interviews, that SLCA is not a method that will be used by all companies but rather by companies with some degree of CSR² involvement. Thus, it was assumed that the most likely user would be found among companies with ambitious CSR profiles. As an indicator of CSR involvement, participation in initiatives like Global Compact (UN 2007), Dow Jones sustainability index (DJSI 2007), or the like was used.

Furthermore, according to a large survey among small medium enterprises in Denmark (Copenhagen Center 2006), there is a very clear and positive correlation between company size and the extent to which a company finds it possible to allocate time and resources for CSR activities. It was therefore assumed that the most probable user company should be of a certain size.

Partly to give an adequate assessment of the national situation and partly for practical reasons, only companies located in Denmark were interviewed. A potential downside of this geographical choice was that, due to the limited number of larger companies in Denmark that also have a high engagement in CSR, none of the potential companies identified had what can be denoted as a high international brand value.

In the Danish context, eight companies of a certain size and interest in CSR were found who were willing to engage in the interviews. Table 1 shows some basic characteristics of these eight companies.

² CSR is short for corporate social responsibility. It is not unambiguously defined, but Business for Social Responsibility has described CSR as the way in which a company operates towards its internal or external stakeholders in a manner that meets or exceeds the ethical, legal, commercial, and public expectations that society has of business (Dahlsrud 2008).

Since SLCA in a company context is about demonstrating ethical or social performance, SLCA can be seen as related to CSR activities. The interviewees were therefore all employed in the company's CSR department, which the interviewees in all cases headed (except in one case), as it was assumed that considerations regarding the relevance and feasibility should be found in this department. The respondents were thereby dealing with the everyday challenges of the company's CSR engagement. In a few cases, the respondents were also included in the company's top management.

3.2 Performing the interviews

As discussed in Jørgensen et al. (2008), SLCA can include very diverse elements and is therefore not a well-defined method. However, in order to begin to answer the questions of relevance and feasibility of SLCA, it is necessary to have a definition of what it is that should be relevant and feasible. A broad definition of SLCA is therefore outlined.

Taking SLCA to parallel environmental LCA (ELCA), it can potentially be used for two different overall purposes (Wenzel et al. 1997):

- To compare the social impacts of two comparable products or services (or compare a product or service against a standard)
- To identify hot spots or improvement potentials in the life cycle of the product or service

In order to fulfill these purposes, some characteristics of the SLCA methodology can be outlined:

- It is an assessment method that focuses on social aspects.
- It focuses on the impacts caused by products or services potentially defined by a functional unit.
- It applies some degree of a life cycle perspective, depending on the goal and scope of the assessment.

These purposes and characteristics of SLCA will be used as a definition and delimitation for SLCA. Thus, the relevance of using SLCA in a company context should be

related to the two overall purposes of SLCA written in the two upper items since these are the overall services that SLCA may provide for the user. The relevance of SLCA is thereby in this study defined and delimited by the demand for not-already-developed tools that may facilitate these two or relatable purposes. It is in this connection important to emphasize that there are already a number of tools relating to the assessment or monitoring of social issues which companies may apply (see AccountAbility (2004) for a review), implying that rival tools exist in some cases.

At the same time, in order to provide these services, the company must perform an assessment characterized by the three lower items. To what extent these characteristics can be met defines and delimits the feasibility. These items, defining the services and characteristics, thereby serve as a point of departure for the themes around which the interviews should evolve. As will be discussed below, during the line of interviews, some of these themes were abandoned and some were expanded or nuanced as the understanding of the situation, in which the companies had to maneuver, increased. As a result, the interviews were gradually streamlined towards a more structured approach in the final interviews, but it also implied that some interviewees had to be approached twice.

A description and motivation for the choice of the mentioned themes are given below. The themes were not addressed in any specific order during the interviews.

One interviewing theme addressed the companies' perception of "the social" in their CSR work. What kind of social impacts did the company find relevant to address and for what stakeholders? This aspect seemed relevant to address since there already is a preconception of how to define "the social" in the various SLCA approaches in terms of impact categories to include for what stakeholders (Jørgensen et al. 2008). If the companies presented a very different perspective on "the social" than the perspectives presented in the SLCA community, this could give rise to concern in relation to the companies' use of SLCA.

A second theme pursued during the interviews was the possibilities to obtain data for the actual life cycle of their products. Both from a "common sense perspective" and on the basis of existing experiences presented in "Section 2," obtaining these data seemed to be a possible barrier for the companies in using SLCA.

A third theme which was altered during the interviews concerned the aspect of quantification or "gradual scoring" of "social performance," which is considered in many SLCA approaches as opposed to a more "binary scoring." This theme was considered because it was hypothesized before the interviews that companies would consider many of the "serious" social impacts, such as the violation of International Labor Organization (ILO) or human rights conventions, as a question of whether or not these impacts

were occurring rather than to which degree they were occurring. If this was the case, the idea of quantifying results would be less relevant from a company perspective. What became apparent during the first interview was that the company tried to have "spotless" suppliers. This led to a discussion of whether it would be acceptable to have a supplier that were "spotless" in relation to what it supplied to the interviewed company but "not spotless" with regards to other productions (for other companies). This issue, which will be discussed more in depth in "Section 4.3," was considered more relevant to address in the following interviews since the idea of considering the whole supplier instead of only that part of the supplier supplying the interviewed company would be a large change from the environmental LCA methodology and potentially conflict with the possibility to set consistent boundaries for a product-related assessment, which SLCA is intended to be as indicated above. Seen in retrospect, addressing the relevance of quantified results still seems pertinent but was, however, not pursued any further in this study.

A fourth theme which was gradually nuanced throughout the interviews related to what uses of SLCA were found to be attractive by the companies. In the first interview, little weight was put on this theme since it was simply assumed that companies would be interested in the uses of SLCA. However, during this interview, it became evident that this assumption was unjustified, as the interviewees found the key functionalities of SLCA mentioned above, being the thorough hot-spot identification and product comparison, unattractive. In the later interviews, this theme was therefore further discussed both by asking how the companies presently performed social assessments, what social assessment tools they felt were missing, and how SLCA potentially could improve on this situation.

A fifth theme addressed the companies' motives for carrying out CSR activities since it was assumed that a categorization of the companies' interest in SLCA could be established on the basis of different motives for performing CSR activities. This hypothesis, however, was neglected as it seemed that most of the companies did not have a clear-cut reason for performing CSR activities. Rather, their motives were mixed and at times somewhat diffuse, making it difficult to pursue the initial purpose of this interviewing theme.

When performing the interviews, it was assumed that the information about how the company conducted or wanted to conduct its business in the CSR area was relatively insensitive, which was also confirmed by the interviewees. The questions could therefore be formed in a direct manner and answers taken at face value. Nevertheless, to facilitate a freer discussion among the interviewer and interviewees and to avoid motivating interviewee embellishment of their current or future CSR work, the interviews were reported anonymously.

The interviewees were instructed to answer as representatives for their companies in all interviews.

4 Results

On the basis of the themes raised in “Section 3.2,” three hypotheses emerged. These were:

1. SLCA may support several and very different assessment needs for the interviewed companies, but not all needs call for method development.
2. Assessing the full life cycle of a product or service is rarely possible for these companies.
3. The interviewed companies see their social responsibility in the product chain as broader than dictated by the product perspective of SLCA

Below, elaborations will be made on each of these hypotheses based on the results of the interviews.

4.1 Different social assessment needs in a company context

In order to address in what way SLCA could be applied in companies, it was discussed in what way they used or wanted to use assessment of social aspects in relation to the company’s activities. As a point of departure for this discussion, it was necessary to explore what was actually understood by social impacts. It turned out that the companies had an almost unanimous understanding of the term, comprising impacts on workers, society, and users, where the types of impacts they considered were based on the ILO and Human Rights conventions or other internationally recognized texts. Comparing the company understanding with the way that the “social” is normally understood in SLCA (Jørgensen et al. 2008), they seem to harmonize well.

Returning to the main question about what social assessment needs the companies had, several different needs were mentioned. Each of these will be shortly described below.

One way of using social assessments in the companies was in relation to making a rough screening, primarily of first-tier suppliers, in order to locate potential social impacts which were seen as important. Such assessment could potentially be supported by SLCA. It should be noted that the companies generally did not put so much emphasis on potentially negative impacts in the downstream chain (further manufacturing, use, and disposal of their products), which is why only the upstream part of the product chain is mentioned here. Seven of the companies either followed or to some extent expressed interest in screening mainly the first tier of supplier. However, six of the companies had in fact already developed more or less formalized methods for

making such screenings of suppliers. The one company which did not yet use any screening tool found it probable that they would use one in the future. One of the aforementioned six companies found their existing screening tools burdensome to use and expressed a need for a more resource-efficient tool than they already applied.

In this connection, it should be noted that none of the companies found the idea of a more thorough hot-spot or improvement potential identification in the life cycle attractive. It seemed that when companies made more thorough assessments in their products’ life cycles, for example, through social audits of the suppliers, the companies addressed eventual critical issues of each supplier before moving to the next supplier, instead of assessing all suppliers and then selecting which one to address first.

Another social assessment activity which the companies mentioned relates to codes of conduct (CoC)³. Often in a business-to-business relationship, a company is demanded by its business partners to comply with a CoC. This demand for compliance encompasses the in-house production and to some extent the company’s first tier of suppliers. Assessing impacts can be a first step towards compliance with the business partners’ CoC. Thus, demands from the business partners in some cases have to do with assessing social impacts in their in-house production and the upstream chain. Performing such chain-oriented social assessment could potentially be supported by an SLCA-like method. Six of the interviewed companies had experienced that business partners or customers made demands about compliance to a CoC. The interviewed companies themselves did in all cases demand compliance with their own CoC from their first-tier suppliers. None of the companies expressed a need for further method development in this area.

A third way of using social assessments in which four of the eight companies showed some degree of interest in using was in relation to comparing the “social profile” of their product with that of a competitor’s product, which could be a way for companies to use their CSR activities to increase their competitive strength. Not surprisingly, the interest for this tool seemed to depend on the extent to which the company assumed to be able to promote a product in comparison to a competitor and the assumed business value of this promotion. The service SLCA should provide would thus be a comparison of the social consequences of the life cycle of two products with comparable functional units. This would be a close analogy to the environmental product comparison that can be made

³ A CoC is generally a specification of how the company and potentially its suppliers should act according to a list of social issues, among others.

using ELCA, e.g., in the form of Environmental Product Declarations. Since this would be a unique service of SLCA, none of the companies had other ways of performing such comparisons. This application of SLCA will be termed “product comparison” in the remaining parts of the article.

Fourthly, two health care companies emphasized a need for social assessment methods related solely to documenting the social impacts on society of the use stage of their product, which for the health care companies could be assumed to be positive. Presently, both companies lacked a methodological approach for performing such assessments. Since a use stage assessment is part of full life cycle assessment, it will potentially be supported by SLCA. This application of SLCA will be termed “use stage assessment.”

Finally, one company had experienced a dilemma where they had to choose between imposing different (negative) social impacts on their stakeholders and searched for tools that could guide them in these situations. Weighting may be performed in relation to, for example, the product comparison mentioned above and could therefore potentially be supported by SLCA. This application will be termed “weighting.”

To sum up, it seems that several different social assessment needs are expressed in a company context which could all potentially be supported by SLCA as it was defined in “Section 3.” Yet, as the interviewees pointed out, with regards to methods for checking for compliance with a CoC or for screening suppliers, the general opinion was that the companies had already themselves developed ad hoc tools which functioned satisfactorily, but streamlining of these was obviously still welcomed. Thus, it seems, according to these companies, that SLCA should support the product comparison, the use stage assessment (or potentially other life cycle stage(s) for other companies), or the weighting of different types of impact. The demand for these tools, however, was less widespread or pronounced among the interviewees. In relation to the product comparison tool, only four of eight showed a varying degree of interest in the tool and merely two and one, respectively, mentioned the latter tools.

It therefore seems, according to the interviewed companies, that the main attractive usages of a SLCA were directed towards an external use. For example, both the product comparison and the use stage assessment would be put to use in order to demonstrate to their stakeholders that their product had certain advantages on the social area.

4.2 The life cycle perspective

A central aspect of SLCA is that it applies some degree of a life cycle perspective as defined in “Section 3.2.” When assessing social impacts in a life cycle perspective, it is important to remember that most social impacts in the life

cycle of a product or service are related to the management of the production processes or the use of the product and less to the nature of the processes or products themselves (Dreyer et al. 2006; Spillemaeckers et al. 2004)⁴. In order to know how something is produced, it must at least be known where it is produced and preferably also under which conditions, information which cannot be determined from knowledge of the product and a bill of materials and list of production processes. The availability of this information and, hence, the interviewee’s possibilities for getting knowledge about their product chains is central.

In this regard, the capacity to address the often numerous suppliers in the product chain was essential. Seven companies stated that they in general did not have the capacity to identify and assess more than the first tier of suppliers. Five companies added that they in a few cases also did consider a second tier of suppliers, and one company had even in one (very simple) case made a relatively rough on-site assessment of the whole upstream chain.

Another issue was that of barriers for the flow of information. Four companies mentioned that in several cases they simply did not have the possibility to address other than the first tier of suppliers because of the unwillingness of suppliers to hand over this information to the companies or because the goods were bought on open markets furnished by a large number of unidentified suppliers.

Finally, two companies mentioned they considered it “bad business practice” not to trust their first tier of supplier to check its own suppliers, impeding their possibility to get information about others than those in the first tier of suppliers.

As a general comment to the life cycle focus, several companies spoke of the “ripple effect,” which implies that instead of assessing and managing the whole (upstream) life cycle themselves, they saw their responsibility as ensuring an acceptable social performance where they had influence, being their in-house production and their first tier of suppliers. The company then simply passed the demands on by asking the suppliers in the first tier to check their own suppliers and pass the demand on further upstream. The company would thereby not address and/or assess the social performance beyond their first tier, not because they considered far upstream suppliers unimportant but because of the possibilities to get information and influence these remote upstream tiers.

⁴ However, even though this has not been studied in detail, the extent to which this is the case may vary depending on type of impact. For example, impacts on work environment may tend to be more process-related as has also been discussed in ELCA (Hauschild et al. 1998).

4.3 The product perspective

As noted as a defining characteristic in “Section 3,” SLCA is focused on social impacts caused by the product or service that is needed in order to fulfill the defined functional unit. It is thus the social impacts, which through a clearly identifiable cause–effect relationship are created in the life cycle of product or service, that are of interest. The line between what is and what is not someone’s responsibility is drawn by these cause–effect relationships. However, when discussing this theme with the interviewees, an interviewee explained that companies should not see their responsibility as something which can be deduced from ethical laws or standards, like these cause–effect relationships. Rather, the company should focus on whether their actions create trust among their main stakeholders. If, for example, one of a company’s main customers shows interest in a certain aspect, the company should act accordingly even if this implies taking responsibility for aspects that the company has not caused. It therefore seems that there may be a difference between the allocation of responsibility done in SLCA and how a company’s stakeholders draw the lines of responsibility. Analyzing further how SLCA would divide responsibility, some clarifications are needed: as mentioned earlier, Dreyer et al. (2006) and Spillemaeckers et al. (2004) claim that social impacts are mainly connected to the conduct of the company. Still, the conduct of the company may vary, not only from production site to production site but also internally at a production site from production line to production line, as pointed out by several of the interviewed companies, for example due to different work processes at different production lines allowing for different working conditions. Acknowledging that, when a company buys a component from a supplier, only the impacts which may be associated with the component through a clear cause–effect relationship should be included in the assessment implies that only the impacts created along the specific production line should be considered (plus any overhead or general impacts that may exist at the production site). Thus, specific impacts connected to a production line whose products are not part of the assessed product should not be considered in SLCA, even though they may happen on the same production site. In order to address this rather complicated concept of allocation of responsibility, a hypothetical scenario was discussed: a supplier produces both component A and B, but only component A is used in the assessed product and hence included in the product system. There are some major social impacts connected to the production of component B but none to A. Would it be acceptable for the company to buy product A and ignore the production of B?

According to the principles about allocation of responsibility stated here, which according to the definition stated

in “Section 3.2” should apply to SLCA, the company should give a positive reply since no clear cause–effect relationship between the production of A and B exists (at least in this example). However, all interviewed companies replied negatively; none of the companies could ignore the production of B. One mentioned they would consider impacts associated with production of A as most important, but still they would not accept poor working conditions in the production of B. No companies did consider other production sites by the same owner but narrowed their focus to the actual site, mainly, it seemed, because of practical reasons. This leads to the third hypothesis which states that the interviewed companies see their social responsibility in the product chain as being broader, i.e., directed towards a company perspective rather than dictated by the product perspective of SLCA.

An explanation of two respondents mentioned in relation to this issue was that the idea of tracking the consequences to some extent has been broadened to consider the motives; it is not enough that the production line is well managed with regards to social impacts, the manager has to have “pure motives.” If, for example, good working conditions exist in one part of the production site, the manager does not show “pure motives” if all workers do not enjoy the same standard.

However, this focus on product site instead of product line did possibly only apply in relation to suppliers. When it came to customers, in this case consumers, two health care companies mentioned they had specific interest in the impacts of the product in the use stage, implying that there may be a shift from company focus in the upstream part of the life cycle to a product focus in the downstream part of the life cycle.

Also, it seemed that there may be a difference between allocation of responsibility depending on whether the assessment is used for risk management or marketing: The purpose of risk management is here understood as ensuring that the company complies with stakeholders’ preferences, whereas, in relation to marketing, the purpose is to demonstrate excellence; something well beyond compliance. To comply with the stakeholder preferences, the whole production site should comply as discussed above, whereas when it comes to demonstrating something above compliance, there are no stakeholder demands, and, thus, the product perspective may be applied if this may in some way promote the company’s products or services. Yet, this final issue was not sufficiently discussed during the interviews and therefore remains hypothetical.

4.4 Trends

SLCA is still in its infancy and its development will probably continue over many years. When discussing a

suitable SLCA design, it is therefore reasonable to consider potential future changes in the companies' positions towards the method and its implications. There are studies addressing trends in CSR (for example Haigh and Jones 2006); yet, no studies were found which describe trends related to the three hypotheses made above in "Section 4." An analysis of future trends was therefore based solely on the opinions of the interviewees.

It was generally assumed by the companies that there would be a stronger focus on CSR in the future than there is now.

However, none of the companies mentioned that they expected their social assessment needs to change in comparison to how they have been presented in "Section 4.1." In relation to the life cycle perspective, the general opinion was that future business partners would demand a higher degree of monitoring and control of first tier of suppliers than what is the case today. One respondent was of the opinion that business partners would also make demands for monitoring and control of second tier of suppliers and another believed that business partners would demand that the conduct of the companies in the whole upstream chain would become the responsibility of the company putting the product on the market. The health care companies also expected that they would have a more systematic assessment of their impacts in the use stage. The general picture in relation to the life cycle perspective was therefore a trend towards a slight increase in the focus on more remote tiers of suppliers and, for some companies, a trend towards considering social implications of their products in the use stage as well. Regarding the incongruence between SLCA and companies on the product perspective, no changes were believed to occur; yet, one company mentioned the focus would be even more on the overall behavior of the company and less on the direct consequences of the product than today.

4.5 Generalizability of results

The basis for the article is the analysis of eight Danish companies, which from a global perspective must be considered a very homogeneous group. This makes it difficult to extrapolate the results obtained here to other contexts. To get reliable information about the usability of SLCA for companies in other contexts, more analyses are therefore needed. However, in the following, we will point to some key aspects about the context of this analysis which may impede or promote the generalizability of the results.

Addressing primarily the uses of SLCA found in this study, it should be noted that the applications of SLCA, as mentioned in "Section 4.1," are generally related to external product marketing (comparative assertion and use stage assessment) and only to a limited extent to an internal

management perspective. During the interviews, the companies' motivations for performing CSR activities were also addressed as mentioned in "Section 3.2." Here, it turned out that much of the reasoning for being responsible did not relate to seizing business opportunities. On the contrary, all companies mentioned that a primary reason was that they saw it as the "right way" of conducting their business. This may indicate that other companies with more focus on the opportunity part of conducting CSR may show more interest in the proposed SLCA-marketing-related tools than the interviewees.

As noted in "Section 3.1," in a few cases, the respondents were also included in the company's top management. Even though the respondents included in the top management were very much in line with the other interviews, it may be that managers working only at a more strategic top management level could have other visions for the CSR activities, e.g., with focus on other maybe more radical views, on the types of assessments that are needed. Yet, how this potential difference in perspective would manifest in assessment needs is unknown.

Regarding the issues concerning the life cycle perspective found in "Section 4.2," it should be noted that the interviewed companies are from a Danish perspective all strongly engaged in CSR, as mentioned in "Section 3.1." Furthermore, an analysis conducted by Gjørlberg (2007) concludes that, in comparison to 19 Organization for Economic Cooperation and Development (OECD) countries (OECD, excluding East European countries, Turkey, Mexico, Korea, Luxembourg, Iceland, Italy, and New Zealand), Danish companies in general have a high ranking in relation to CSR performance. This indicates that the CSR performance of the interviewed companies from an international perspective must be considered to be very high. Assuming that this CSR engagement is related to capacity, the majority of companies in the OECD countries will have less capacity to engage in SLCA than the companies interviewed in this study. Thus, when the interviewed companies found the life cycle perspective to be demanding, most companies will probably support this view. However, it should be mentioned that none of the interviewed companies can be characterized as having a high international brand value. It is possible that more well-known international brands would be more interested in the full life cycle because risk management in relation to their reputation may be a more critical issue, as they are more often the target of exposures (Roberts 2003; Klein 2000). This potential interest in the whole life cycle may give these companies other possibilities for performing life-cycle-oriented assessments than found here.

Concerning the generalizability of the product perspective addressed in "Section 4.3," it is difficult to find any direct indications. However, when going through the

assessment and management tools for business relating to accounting and reporting CSR (see AccountAbility (2004) for an overview), it seems that the focus is on the conduct of the entire company and not only related to a single production line. This may support the findings in this study that companies in general focus on the entire company and that companies thereby see their social responsibility in the product chain as broader than a product perspective.

5 Discussion and conclusions

What are the company needs and what is feasible in terms of requirements to data and work? For the interviewed companies in this article, three potential attractive applications of SLCA can be found where method development is called for, viz.: a product comparison; use stage assessment (or potentially other part of the life cycle); and a weighting of social impacts. However, when comparing these potential uses of SLCA with the other hypotheses made in “Section 4,” some problems meet the eye. First of all, it was found that the interviewed companies had difficulties in obtaining information about suppliers or customers in remote parts of the upstream or downstream chain. The same conclusion was also reached in the case studies referred to in “Section 2.” This problem is emphasized by the need for site-specific data, as suggested above, making the data collection very time and resource consuming. In relation to a product comparison, this implies that a full product comparison including the complete life cycle may be out of reach for most, if not all, of the interviewed companies, and, as pointed out in “Section 4.5,” probably also for most other companies. This problem may to some extent be mitigated in the future if companies gain further insight in their own production chains, as suggested in “Section 4.4.” In relation to the use stage assessment, the availability of data seems a smaller barrier for its use as it only relates to one stage in the life cycle for one product, and, in relation to the demanded weighting tool, this issue is of no relevance, as it does not relate specifically to the life cycle.

Furthermore, the issue raised in “Section 4.3” about the product perspective may also be problematic in relation to product comparison. The reason is that by accepting the interviewed companies’ view on responsibility comprising the whole production site in an SLCA would easily create a boundary setting issue, as the assessment would include not only the directly influenced production lines but potentially also a series of other lines, to some degree randomly delimited by the geographical boundaries of the production site. The results of the assessment would thus be the consequences of the assessed product or service plus an additional random amount, which would hamper a clear comparison of products or services.

However, as was hypothesized in “Section 4.3,” if the product comparison is used for marketing, i.e., an external use, rather than risk management, i.e., an internal use, which will probably be the case as was concluded in “Section 4.1,” the product perspective may be usable for companies already complying with stakeholders’ demands. Yet, this point remains undocumented.

In relation to the use stage assessment, both companies demanding this tool specifically asked for a product scope. Also, it may be argued that it is only in relation to the product comparison that strict rules for the boundaries of the assessment are essential. Neither are considerations regarding the boundaries required in relation to the weighting of social impacts.

Thus, it seems, for the interviewed companies, that the product comparison is impeded by at least the availability of data and potentially the incongruence about allocation of responsibility in SLCA and among the company stakeholders. The first problem may be mitigated by increasing access to data, for example, through the establishment of databases as attempted in the Earthster initiative (www.earthster.org), using, e.g., sector-specific data as suggested by Schmidt et al. (2004) or significantly reducing the scope of the comparison to only one or a few life cycle stages. The second problem, should it turn out to be so, could question the general idea of performing product comparisons of social issues for the interviewed companies. However, as the study is inconclusive on this matter, the use of product comparisons by the interviewed companies cannot be dismissed, but it seems very likely to be performed with a limited scope, at least until the companies gain larger insight in their own product chains. Regarding the two other potential applications of SLCA, being the use stage assessment and the weighting, these scoping issues are of little or no importance. This analysis therefore points out that they could be potential areas of application for SLCA for the interviewed companies.

In summary, at least for now with a limited availability of data, it seems that the use of SLCA tools for the interviewed companies and, as indicated in “Section 4.5,” possibly for most companies will be restricted to applications with very limited or no life cycle perspective. Hence, it is debatable to what extent at least the interviewed companies in fact demand SLCA as a parallel to ELCA since, at least to these authors, a cornerstone of SLCA is the life cycle perspective, as noted in “Section 3.2.” By developing SLCA tools for applications without a full life cycle perspective, it runs the risk of becoming a tool for endorsing specific parts of the life cycle rather than for a holistic assessment method as normally associated with life cycle assessment methods.

However, here, it should be remembered that this analysis builds on a very limited number of companies

from a very limited geographical area and that companies in other contexts may have other possibilities or needs, as pointed out in “Section 4.5.” Thus, more than giving final results about the usability of SLCA in a company context, this article raises the question and points out that the usability of SLCA is not self-evident. When developing the SLCA methodology, it therefore seems very important to consider whether the relevance and feasibility expected by the developer is actually in accordance with the situation of the intended user group.

6 Perspectives

In the short history of SLCA, the main focus has been on methodology development and the performance of case studies. These case studies can highlight aspects of importance for how SLCA is to be developed, for example, through illustrating that a result can actually be reached through following a certain methodology and the practical implications of using a certain approach, for example, related to getting data, as was touched upon in “Section 2.” However, we advocate that the only criterion of success for the development of SLCA cannot be merely whether a result can be reached in a feasible manner. This article has focused on relevance together with feasibility in order to address one criterion of success for the development of SLCA, namely, the usability. Many questions are still to be answered with regards to this criterion, considering also the usability of SLCA from a nongovernmental organization or governmental organization perspective since they may also have specific needs and limitations which will affect their potential use of SLCA.

However, assuming that most scholars are engaged in the development of SLCA because of the expectation that SLCA will in some way or the other have a beneficial effect on the stakeholders in the life cycle of the assessed product, SLCA should not only be usable but also have a certain beneficial effect. Or, maybe more modestly, SLCA should as a minimum not inflict damage on the stakeholders in the life cycle of the assessed product or service. One reason why such damage could occur relates to the “cut-and-run” phenomena, denoting a situation where a company severs their contract with a supplier because of its low performance on social or environmental issues. A very real problem of this conduct may be the closing down of suppliers, setting the workers in even poorer situations than before (see, for example, CS Monitor (2006)). An SLCA focusing on the conduct of the suppliers and customers would in principle encourage a company using an SLCA to sever their connection with low-performing suppliers. SLCA could in this way, and in several others, create negative social impacts for the stakeholders it is in principle

made to defend. To increase the beneficial effect of SLCA, such potential consequences have to be investigated so that specific requirements for the methodological development can be proposed.

Addressing the potential uses of SLCA as mentioned in “Section 3,” the way in which the SLCA could have a beneficial effect is through enabling the producer to identify and potentially act on the main social impacts in the life cycle or through enabling, e.g., consumers, to choose the product with the best social impacts. This, however, implies that the result has to be valid, i.e., the assessment result has to represent the actual effect on the stakeholders of the life cycle of the assessed product. An invalid assessment, on the other hand, would potentially point decision makers towards the poorer product and thereby “cause” the continuation of these poorer conditions. Therefore, together with the “effect of SLCA” comes the “validity of SLCA” as a second and third criterion of success. Validity can obviously also be seen as an inevitable demand for an assessment method developed within a scientific milieu since one proposed purpose of science is to establish valid information. The demand for validity is by no means new in relation to SLCA. In most, if not all, of the proposals on SLCA, measures are taken to increase the validity. However, validity in some work on SLCA seems to be placed subordinate to concerns of feasibility. We propose a juxtaposition of not just usability and validity but of all three proposed criteria as illustrated in Fig. 1.

In relation to the continued research on SLCA, a significant difference between the criteria is that whereas the usability as mentioned above inevitably will be explored in the development of SLCA, this is not the case for the validity and effect of SLCA. For example, case studies would in many cases not capture these two aspects. We therefore find that research specifically within these two areas—the validity and effect of SLCA—should be a central activity in the SLCA development.

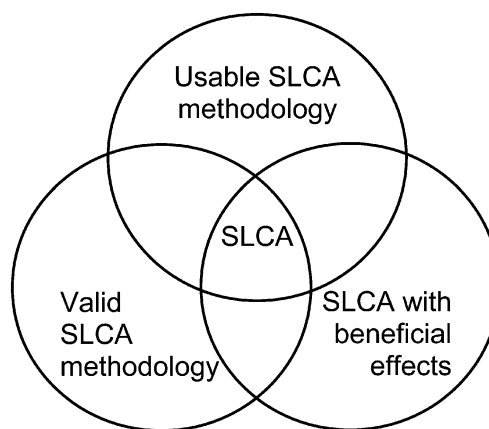


Fig. 1 Proposed criteria of success for the development of SLCA

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